of $10^5 - 10^6$ cycles per second. The output analog signals may be sent to a transcriber where the points, or pattern drawn, on the surface **57** are reproduced. Alternately, they may be placed in storage for subsequent use. In such a manner, each of several sketches by an engineer may be stored until a final design is completed, for example. As above, the signals may be processed by a programmed calculator to compute desired information.

The aforementioned gel and net are particularly useful in the constructions shown in FIG. **6** and **7** because of their response to pressure. When even a light pressure is applied at a point on surface **57**, these insulations **56** deform at only a small point to permit contact of resistive sheet **10** and the conductive sheet **54** (or **59**). In contrast, general pressure over an area as that exerted by a hand holding the writing instrument will not cause penetration of the insulation **56** and thus there is no output signal.

For some of the applications of the embodiments of my invention, it may be desirable to only produce an output signal, or set of signals, at certain times even though the probe may be in continuous contact with the sensor unit. For example, as the probe is used to trace the contour of a model, signals may be desired at only certain distinguishing features of the model. Accordingly, the probe may be fabricated as illustrated in FIG. **8**. Contained within a probe body **60** is a pressure sensitive normally open switch **61**. Switch **61** is operated by plunger **62** which may be the same as probe tip **36** (see FIGS. **1** and **5**). A spring **63** or other biasing means is used to normally keep plunger **62** fully extended from body **60**. Leads **64** and **65** are used to connect switch **61** between probe tip **36**, for example, and lead **37** of FIG. **1**. In the case of a probe used with the embodiments of FIGS. **6** and **7**, leads **64** and **65** may be used to connect the switch **61** between the conductive material **54** (or sheet **59**) and the aforementioned reference potential. Thus, output signals are produced only when extra pressure is applied to the probe.

Another form of pressure-sensitive control of the output is illustrated in FIG. **9** which is applicable to the embodiments of FIGS. **6** and **7**. In these embodiments, it may be desirable to distinguish between light contact between the resistive sheet **10** and the conductive sheet, i.e., when the plastic conductive sheet **59** may lack sufficient resiliency to immediately break contact from the resistive sheet **10**. This pressure control may be accomplished using an operational amplifier **66**, such as Model QFT-5, manufactured by Philbrick-/Nexus Research of Dedham, Mass. The operational amplifier is connected to both the resistive sheet **10** and the conductive sheet **59** (or **54** of FIG. **6**) with a voltage bias source not shown. When the resistance between these two layers is reduced to a preset value (determined by the bias) by sufficient pressure of the probe, the operational amplifier closes a gate **67**, or similar device, whereby an output signal is available for reading, storage or computation.

Having described several embodiments of my invention, and applications therefor, it will be apparent that the basic electrographic sensor has many applications. I mean, by the term basic electrographic sensor, the resistive sheet and its associated spot electrodes and resistors. This basic unit may be used to achieve greater resolution and accuracy, with prior art circuits, in place of the prior art sensors. Furthermore, they are a separately marketable item for such uses, for sale to manufacturers of the total system, and for replacement units for users of my complete electrographic system.

I claim:

1. An electrographic sensor unit for use in determining the x and y planar coordinates of a point, which comprises:

a rectangular sheet of resistive material having a uniform electrical resistivity throughout the sheet;

corner spot electrodes in each corner of the resistive sheet in electrical contact therewith;

a plurality of spaced-apart edge spot electrodes along each edge of the resistive sheet in electrical contact therewith;

a plurality of discrete first resistors connected between adjacent of all of edge spot electrodes; and

a plurality of discrete second resistors connected between the corner spot electrodes and adjacent edge spot electrodes whereby the first and second resistors form series resistor networks along each edge of the resistive sheet.

2. The sensor of claim **1** wherein each of the edge and corner spot electrodes is small with respect to the spacing therebetween; wherein the edge spot electrodes along each edge of the resistive sheet are equally spaced from each other of that edge and from the adjacent corner spot electrodes; wherein all of the first resistors are of equal resistance value; and wherein all of the second resistors are equal and each have a resistance value greater than the value of each of the first resistors.

3. The sensor of claim **2** wherein the corner and edge spot electrodes are circular and their diameter is about 1/16 inch; the spacing therebetween is from about 1 inch to about 2 inches; the resistivity of the resistive sheet is about 2,000 ohms per square; the first resistors are each of a value of about 50 ohms with a precision of at least 1.0 percent; and the second resistors are each about 75 ohms with a precision of at least 1.0 percent.

4. The sensor of claim **1** wherein each of the edge spot electrodes is individually displaced toward the center of the resistive sheet, from lines joining the corner spot electrodes, an effective distance such that application of an electrical potential across the resistive sheet by opposite pairs of the series resistor networks produces equal potential lines substantially parallel to the lines joining the corner spot electrodes whenever the equipotential lines are at least one spot electrode separation distance from those lines joining corner spot electrodes.

5. The sensor of claim **1** further comprising:

a voltage source having first and second output leads;

switches connected between the voltage source leads and the corner spot electrodes on the resistive sheet;

means for operating the switches sequentially whereby during a first time interval the first output lead of the voltage source is connected to both ends of one of a first pair of opposite series resistor networks along one edge of the resistive sheet and the second output lead of the voltage source is simultaneously connected to both ends of the other of the first pair of opposite series resistor networks along the opposite edge of the resistive sheet and whereby a second pair of opposite series resistor networks along the remaining edges of the resistive